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U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Research

FOREST INSECT CONDITIONS
FOREST RECREATIONAL AREAS, SOUTHERN CALIFORNIA
MARCH 1956
RECONNAISSANCE SURVEY

The period from March 5 to March 17, 1956 was spent by the author in visiting recreational forest areas of southern California to discuss forest insect conditions present within these areas. Accompanying the author from March 5 to March 8 was R. L. Lyon of the Experiment Station, Berkeley, and from March 12 to March 16, J. L. Averell of the U. S. Forest Service Regional Office, San Francisco. Land management representatives of the various areas visited participated in discussions and travel within their areas.

The entire trip included visits to the Trabuco and Descanso Ranger Districts on the Cleveland National Forest; Cuyamaca Rancho State Park; San Jacinto, Big Bear, and Arrowhead Ranger Districts on the San Bernardino National Forest; Valyermo Ranger District on the Angeles National Forest; and Mt. Pinos Ranger District on the Los Padres National Forest. Visits were also made to the Forest Supervisors' offices of the Cleveland and San Bernardino National Forests and the State Division of Forestry office in Riverside.

Throughout this report, mention is made of cruising small 2-1/2-acre plots for loss. These plots are being used to study periodic insect-caused loss and the data are analyzed at periodic intervals. The highest loss occurred on the plots in the Grade Valley area of the Mt. Pinos District. Conditions noted and control suggestions are given as follows, by areas:

Trabuco Ranger District - Cleveland National Forest.--A letter from the Regional Office dated December 16, 1955, transmitting an insect report from Ranger J. K. Munhall, requested an appraisal of an infestation involving approximately 150 trees. On March 6, the infestation area was visited with Ranger Munhall and Robert Lyon. The insect problem is in a stand of scattered Coulter pine, covering about 1,500 acres, located along a ridge at the head of the Indian Truck Trail and the Main Divide in the Santa Ana Mountains. Pine engraver beetles, Ips sp., are causing topkilling of many trees up to about 30 inches d.b.h. and complete killing of some of the smaller trees. Associated with the damage are several broken tops of green trees. This damage was caused by wind. Possibly the Ips broods developed in these broken green tops last year and have since moved into the surrounding green trees. This point could not definitely be established. Normally, no control is necessary against Ips broods which move from slash into green trees. This is because the Ips broods usually fail to sustain themselves in green trees.

Occasionally, Ips broods are able to establish themselves in green trees without first building up a large population in slash.

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It is suggested that no control action be initiated at this time. Surveillance of this area for further possible topkills should be continued this coming summer and, if the infestation persists, another examination of the area should be made by an entomologist.

Incidental to the examination of the area for insect-caused damage, a number of Coulter pines were noted as having dead branches in the lower part of the crown. Rust cankers were found on these branches which have since been identified by Dr. W. W. Wagener of the Experiment Station as Peridermium harknessii (Moore) Meinecke. Wagener states that this rust is probably not serious, inasmuch as it is known to cause severe damage only in small trees, and then only occasionally. Apparently the rust has little bearing on the associated Ips outbreak.

Cuyamaca Rancho State Park.--The afternoon of March 6 was spent within the Park discussing the pending control program against the California flat-headed borer and the associated maintenance control program. Engaged in the discussion were the author; Lyon; M. C. Morgan, E. R. Junette, D. E. Lawyer, and F. A. Meyer of the State Division of Beaches and Parks; P. Sischo of the State Division of Forestry; and Dr. H. Ruckes, Jr., of the Department of Entomology, University of California.

The actual insect situation has changed but little since the examination in October 1955 ^{1/}. The California flatheaded borer continues to be the major problem, and newly faded trees killed by this insect are showing up this spring. The Park personnel have completely spotted and marked the area once, arriving at a total of 147 flathead-infested trees. After spending some time in the field with the men who did the marking, it was determined that some of the already marked trees would not require treating. These trees contained broods of incipient larvae, which will not mature as adults until at least next year, maybe later. It will be better to forego treating these trees until such time as it is definitely known that the broods are developing on into the adult stage. The number of such trees that have already been marked will probably be offset by the number of new fades that show up.

In addition to flathead-infested trees spotted, the crew picked up only three trees infested with the western pine beetle and one tree infested with the mountain pine beetle. Past control efforts in the Park have been largely to suppress western pine beetle outbreaks and have been most successful. Control programs initiated against this insect following its buildup in Coulter pine surrounding the Canejos Burn have, since 1953, reduced losses to an insignificant figure.

^{1/} G. L. Downing. Forest Insect Conditions, Cuyamaca Rancho State Park, San Diego County, California, October 1955. Appraisal Survey. C.F.& R.E.S., Berkeley, California, Nov. 16, 1955.

A new working agreement between the Division of Beaches and Parks and the Division of Forestry has been completed and is now in the process of being signed by both parties. Once this new agreement has been processed, the control program is scheduled to get under way. Control work may start by the middle of March. A 30-man inmate crew is planned for the control work, which should be more than adequate to handle this small project. In any event, all the infested trees should be treated by the first of May to prevent losing some of the early emerging broods. Following this initial control effort, plans should be made to have the entire area spotted regularly for new "bug fades". This, then, would be the maintenance control program, which should run throughout the year. To assure success in preventing broods from escaping during the summer maintenance control period, all trees spotted should be treated quickly. This point is not so critical during the winter months, because brood development is much slower. This is especially true of the California flatheaded borer, which emerges only during the spring and summer months.

All mountain pine beetle- and western pine beetle-infested trees should be treated as they are spotted throughout the year.

Descanso Ranger District - Cleveland National Forest.--Forest and District personnel were tied up in training schools and on fires, so that no contacts were made. The Mt. Laguna area was visited with Lyon and Ruckes, and 11 of the fifteen 2-1/2-acre mortality drain plots established by the Station were cruised for loss. In addition, brief observations were made in connection with the proposed spray program against the California flat-headed borer.

San Jacinto Ranger District - San Bernardino National Forest.--The District was visited on March 9 and 10. Treating is now under way, with the following progress reported by the District:

	<u>Spotted</u>	<u>Treated</u>	<u>Left to treat</u>
1. Indian Creek Unit	31	26	5
2. North Fork Unit	54	9	45
3. Strawberry Unit	136	91	45
4. Mountain Center Unit	162	85	77
5. Garner Valley Unit	<u>230</u>	<u>--</u>	<u>230</u>
Total	<u>613</u>	<u>211</u>	<u>402</u>

Most of the trees treated to this time have been infested with the western pine beetle and mountain pine beetle, but a few California flatheaded borer- and Ips-infested trees have also been treated. The majority of the remaining trees are concentrated in the last two units -- Mountain Center and Garner Valley -- and contain broods of the California flatheaded borer and Ips.

Funds for this project are apparently running short of the amount needed for a complete job, and action is being taken to obtain additional funds through an amended cooperative agreement with the federal, State, and county agencies involved. If the amended agreement goes through, all of the trees needing treatment will be included in control. If, however, additional funds are not forthcoming, it is suggested that control efforts be directed toward cleaning up all of the western pine beetle- and mountain pine beetle-infested trees first. This is suggested because the control program against these two insects has been in progress for many years and losses have been kept fairly well in hand. California flatheaded borer losses, on the other hand, have but recently received attention and control against this insect is just making its start. If sacrifices must be made, they should be at the expense of the most recent control effort, which has not as yet run long enough to produce noticeable results.

An Ips outbreak has developed in Garner Valley which apparently is not associated with slash and has sustained itself in green Jeffrey pine for some time. This outbreak is, at the moment, aggressive and should receive immediate attention if additional funds are forthcoming. The Ips problem is confined, for the most part, to a few large groups and is causing both topkilling and the death of entire trees up to about 20 inches d.b.h. The number of Ips trees needing treatment probably exceeds 100, and is included in the figure given for the Garner Valley Unit.

Big Bear Ranger District - San Bernardino National Forest.--On March 11, a trip was made over parts of the Groat Creek Sale area and on through Holcomb Valley. The marking of the Groat Creek sanitation-salvage sale was checked and found to be very good. It was at first thought that the marking was conservative, but this was because only the poorer of the Risk 3 and all of the Risk 4 trees were marked. This, then, is a modified, instead of a true, sanitation-salvage treatment where all of the Risk 3 and Risk 4 trees are marked. This sale area is now completely marked and will soon be let for bid. A sanitation-salvage cut in this stand should improve its appearance considerably, as well as afford the area protection against serious insect-caused losses.

That part of the District around Holcomb Valley and Big Pine Flat was noted as possessing a considerable number of high-risk trees. Past loss within this area has been high, but is presently at a moderate level. The staff personnel from the District and Forest mentioned this as a possible sale area, but said that it is encumbered with many mining claims which make sales preparations extremely difficult. No immediate sales are contemplated for this area.

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Ranger McGee has a man marking insect-infested trees on the District. These trees are sold to a mill, which is located in Lucerne Valley completely outside the Forest. The prompt cutting and removal of insect-infested trees is an excellent practice and one which should be encouraged, not only for this District but for any others that have a similar insect problem. If the logs are sold to an operator within the Forest, care should be exercised to be certain that the logs are first treated with chemicals to kill the broods, or that the bark slabs are burned prior to the emergence of the brood.

Arrowhead Ranger District - San Bernardino National Forest.--The Arrowhead District was visited in company with J. L. Averell, C. A. Yates, G. P. Lang, and C. Nash, on March 13. Insect-control accomplishments on the District to February 29, 1956 are as follows:

	<u>Government</u>	<u>Private</u>	<u>Total</u>
Spotted	160*	223	383*
Treated	<u>158</u>	<u>165</u>	<u>323</u>
To treat	<u>0</u>	<u>58</u>	<u>58</u>

* Two trees abandoned or pitched-out attacks.

It is evident from the above figures that all of the control effort is now going toward control on private lands. This is because of the delay in securing an agreement to treat trees on private lands. Prior to signing the agreement, all control efforts were directed to government land, and control work needed on these lands was completed.

To avoid the long delay in making cooperative funds available, as happened this year, it might be well to have the new agreement processed and ready for final signatures by June. This point has been considered by all parties concerned and an effort will be made to have this done this year. This applies to both the San Jacinto and Arrowhead cooperative agreements.

The trees on private land that remain to be treated are for the most part located in the general vicinity of Lake Gregory and Crestline. Existing funds should be sufficient to handle this job.

Although not included in the figures listed, there exists a slight buildup of western pine beetle-infested ponderosa pine poles along the edge of the Panorama Burn. It is expected that a pole-peeling operator now operating in the area will buy this material and thus remove the source of the trouble.

The Smiley Park Burn of last fall destroyed some timber and partially burned many trees. This area was visited, but no current insect activity was found. It is probably too soon after the fire for broods to have become established. This area should be carefully watched for a possible insect buildup during the next two years.

Valyermo Ranger District - Angeles National Forest.--The Big Pines area was visited with J. L. Averell, G. W. Armstrong, C. C. Beardsley, and C. D. Plank, on March 14. There have been no changes in the insect situation since the last visit in October of 1955. The area logged over by sanitation-salvage remains free of insect activity, while adjacent unlogged areas continue to sustain loss. It is expected that the unlogged portion of the area will be logged within the year and that approximately 10 million board-feet will have been removed from this entire area under the existing sales contract.

Three plots, of 2-1/2 acres each, were cruised for loss. These plots are cruised annually as part of an overall timber drain study of southern California.

The Ips problem that appeared on recently cutover lands adjacent to Wrightwood last fall has not spread. No trouble is anticipated from this source this year.

Mt. Pinos Ranger District - Los Padres National Forest.--March 15 and 16 were spent on this District with J. L. Averell, G. F. Roskie, and A. Sheldon. The sanitation-salvage sale in Grade Valley has been partly completed. Within the logged portion of the sale area, losses are confined to the trees below 22 inches d.b.h.. Trees below this diameter limit were not included in the sale. These losses remain fairly high, as expected. A large share of the unlogged sale area was marked well over a year ago and an examination of this area disclosed many trees that have died since marking took place. Not a single merchantable unmarked tree was found to have died within the examined unlogged area. The loss of many trees which were marked for cutting but which have not yet been logged serves to point out the need for completing such sales and removing the high-risk trees promptly.

A maintenance control program has been suggested for Grade Valley, following logging, to minimize further large-scale losses. Since only about half of the total area has been cut over, it does not appear practical to begin an all-out maintenance program as yet. Until such time as the sale is completed it is suggested that direct control be confined to the already logged area and then only around campgrounds, along main roads, and to suppress any "hot spots" or aggressive group losses that may occur anywhere within the logged area. No direct control should be attempted within the unlogged area. Once the entire area becomes cut over by sanitation-salvage, a decision should be reached regarding the type of maintenance control program that Grade Valley should receive.

Incidental to the examination of Grade Valley, it was noted that slash is not a problem as a source of insect infestations. The reason for this is that a chipper was used by the logging operator to dispose of the slash. Slash has in many instances been a real problem following logging, in southern California as well as elsewhere in the State. It offers a breeding place for pine engraver beetles, as well as contributing to other natural hazards. It would appear that a chipper is an ideal means of avoiding such problems in southern California and perhaps elsewhere. Certainly the possibilities of expanding the use of chippers to include other areas should be considered.

Parts of Mt. Pinos have been cut over by sanitation-salvage, and presently additional areas are marked or proposed for such cuttings.

On the lower east side of Mt. Pinos a small pine engraver beetle problem has developed from Jeffrey pine slash that was piled current with logging. This is of course an ideal way to create an Ips outbreak. The slash should have been lopped and scattered following logging and then piled after drying out, if desired. The chances are good that this Ips outbreak will subside without further damage; however, it would be well to keep an eye on the area for the next few months, in case further activity should appear.

At the head of Mill Canyon on Mt. Pinos, a localized flareup of the California flatheaded borer and the pine engraver beetle has developed in pole-size Jeffrey pine. This small infestation appears to be aggressive and should receive attention soon if further possible damage is to be avoided. The use of penetrating oil sprays (EDB), which is in current use on the District, should be employed in treating the currently infested trees.

Aside from these two small problems, the rest of Mt. Pinos is relatively free of insect damage. This is especially true of the areas which have already been sanitation-salvage logged.

Three 2-1/2-acre mortality drain plots were examined on the District. One of the plots burned over last summer and should be replaced by the Experiment Station.

Berkeley, California
April 5, 1956

George L. Downing
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